

## INDIVIDUAL TRACKING CHANNEL

**FIG. 1**

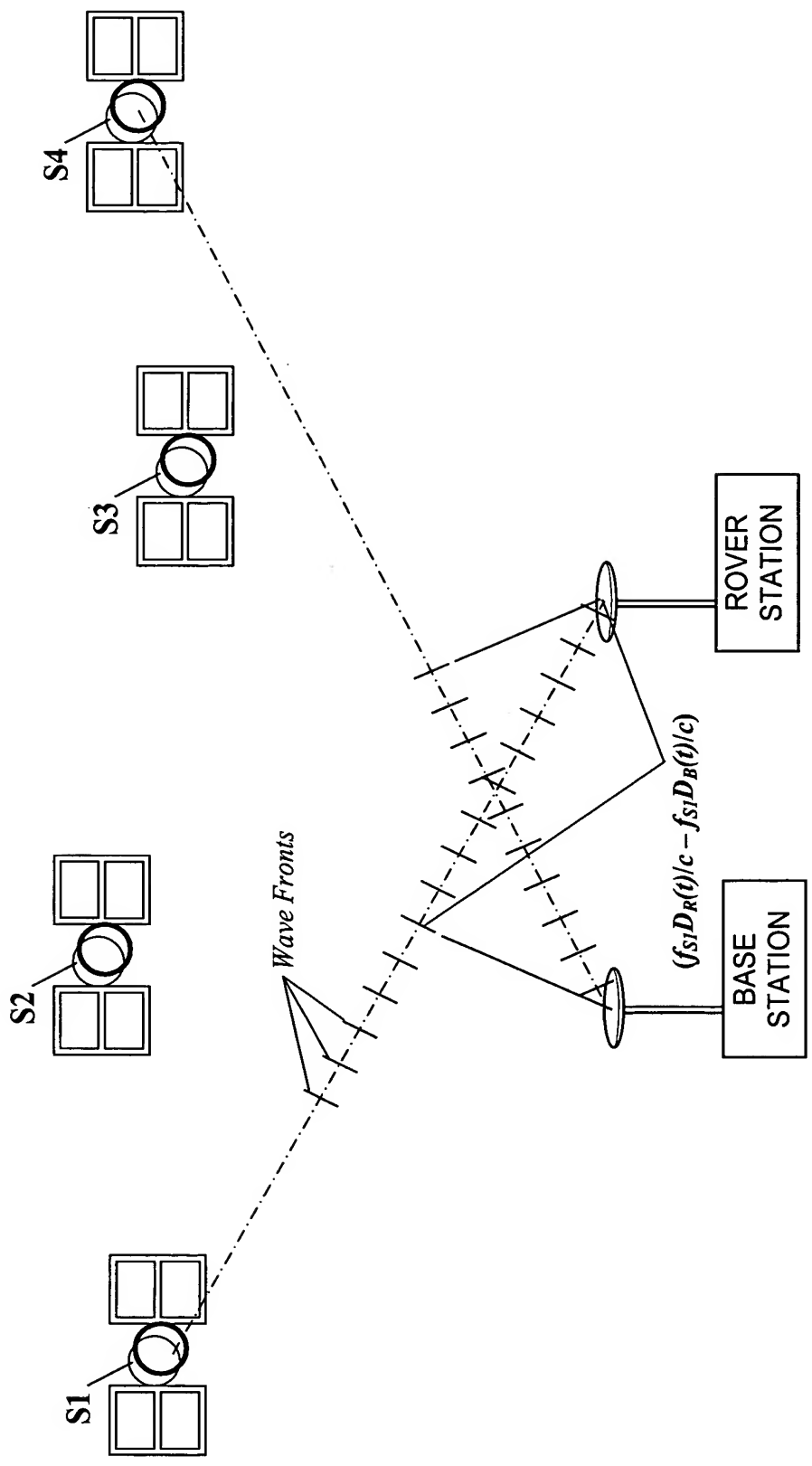


FIG. 2

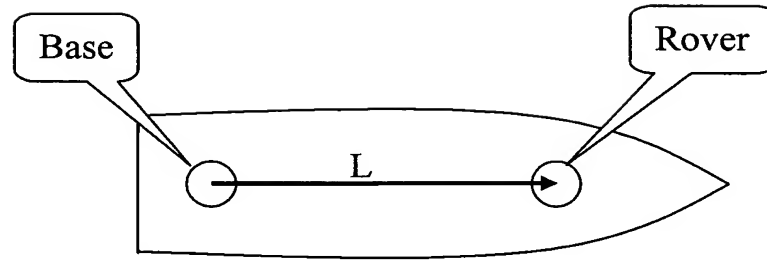


FIG. 3

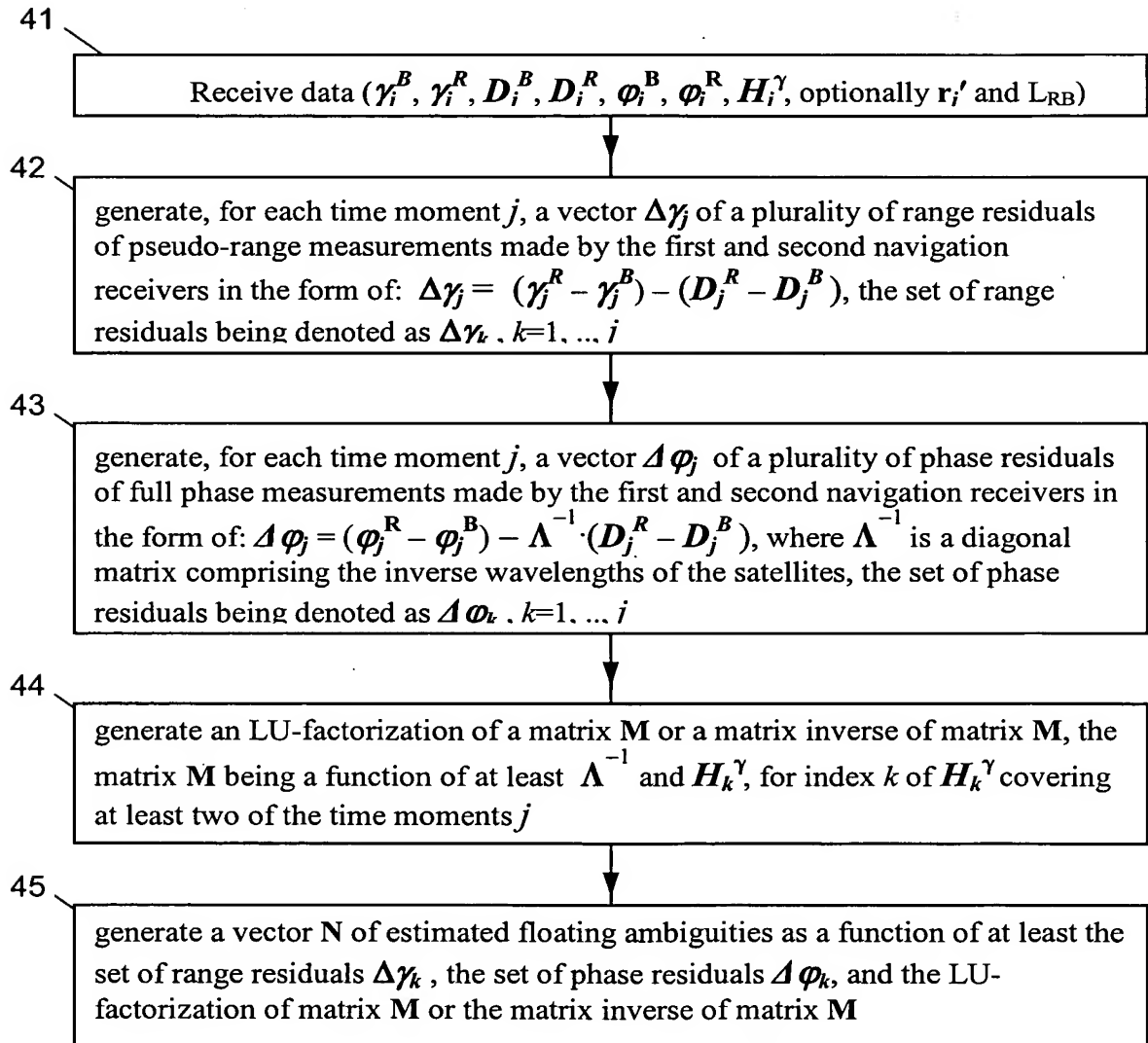


FIG. 4

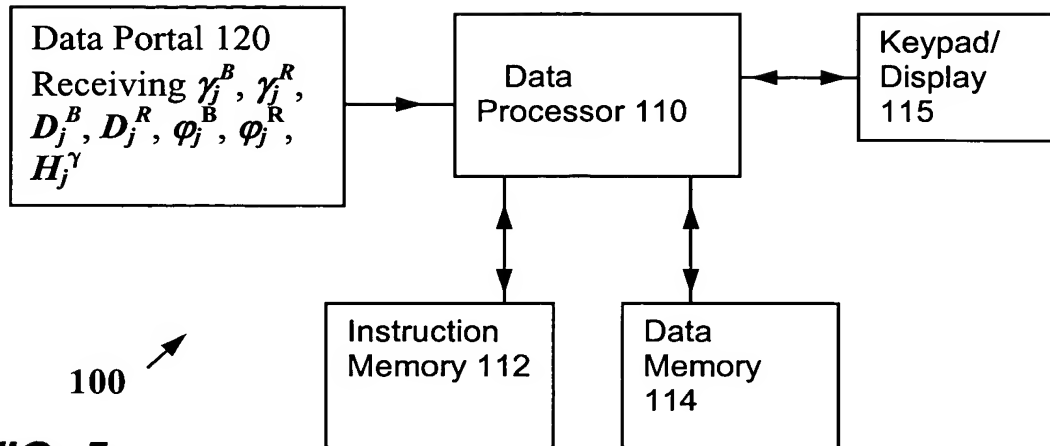


FIG. 5

Instruction Set #1 directs data processor 110 to receive the measured data from data portal 120.

Instruction Set #2 directs the data processor to generate, for each time moment  $j$ , a vector  $\Delta\gamma_j$  of a plurality of range residuals of pseudo-range measurements made by the first and second navigation receivers in the form of:  $\Delta\gamma_j = (\gamma_j^R - \gamma_j^B) - (D_j^R - D_j^B)$ , the set of range residuals being denoted as  $\Delta\gamma_k, k=1, \dots, j$

Instruction Set #3 directs the data processor 110 to generate, for each time moment  $j$ , a vector  $\Delta\varphi_j$  of a plurality of phase residuals of full phase measurements made by the first and second navigation receivers in the form of:  $\Delta\varphi_j = (\varphi_j^R - \varphi_j^B) - \Lambda^{-1} \cdot (D_j^R - D_j^B)$ , where  $\Lambda^{-1}$  is a diagonal matrix comprising the inverse wavelengths of the satellites, the set of phase residuals being denoted as  $\Delta\varphi_k, k=1, \dots, j$

Instruction Set #4 directs the data processor 110 to generate an LU-factorization of matrix  $\mathbf{M}$  or a matrix inverse of matrix  $\mathbf{M}$ , the matrix  $\mathbf{M}$  being a function of at least  $\Lambda^{-1}$  and  $H_k^\gamma$ , for index  $k$  of  $H_k^\gamma$  covering at least two of the time moments  $j$

Instruction Set #5 directs the data processor 110 to generate a vector  $\mathbf{N}$  of estimated floating ambiguities as a function of at least the set of range residuals  $\Delta\gamma_k$ , the set of phase residuals  $\Delta\varphi_k$ , and the LU-factorization of matrix  $\mathbf{M}$  or the matrix inverse of matrix  $\mathbf{M}$

COMPUTER-READABLE MEDIUM

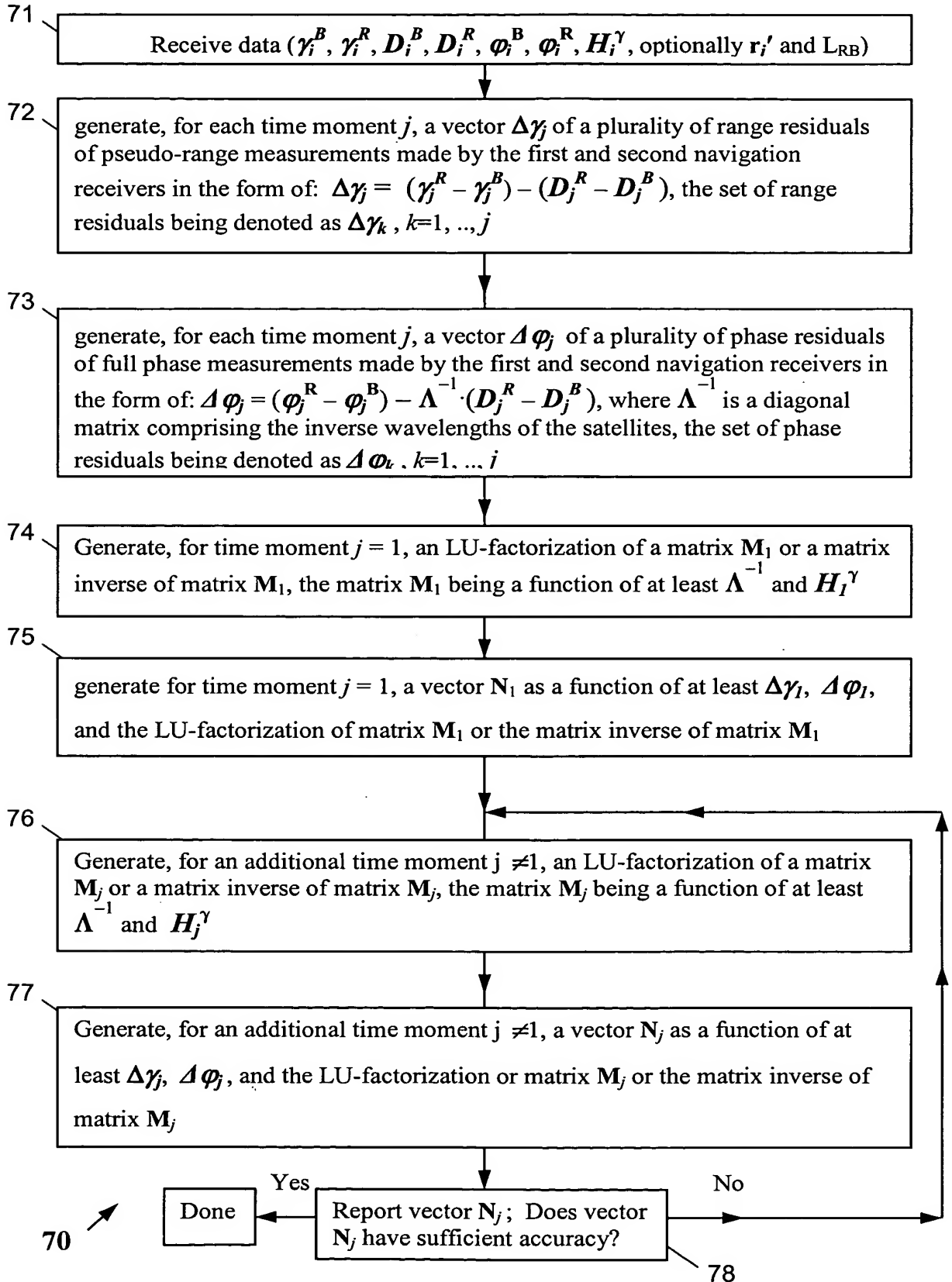


FIG. 7

Instruction Set #1 directs data processor 110 to receive the measured data from data portal 120.

Instruction Set #2 directs the data processor to generate, for each time moment  $j$ , a vector  $\Delta\gamma_j$  of a plurality of range residuals of pseudo-range measurements made by the first and second navigation receivers in the form of:  $\Delta\gamma_j = (\gamma_j^R - \gamma_j^B) - (D_j^R - D_j^B)$ , the set of range residuals being denoted as  $\Delta\gamma_k, k=1, \dots, j$

Instruction Set #3 directs the data processor 110 to generate, for each time moment  $j$ , a vector  $\Delta\phi_j$  of a plurality of phase residuals of full phase measurements made by the first and second navigation receivers in the form of:  $\Delta\phi_j = (\phi_j^R - \phi_j^B) - \Lambda^{-1} \cdot (D_j^R - D_j^B)$ , where  $\Lambda^{-1}$  is a diagonal matrix comprising the inverse wavelengths of the satellites, the set of phase residuals being denoted as  $\Delta\phi_k, k=1, \dots, j$

Instruction Set #4 directs the data processor 110 to generate, for time moment  $j = 1$ , an LU-factorization of a matrix  $M_1$  or a matrix inverse of matrix  $M_1$ , the matrix  $M_1$  being a function of at least  $\Lambda^{-1}$  and  $H_1^T$

Instruction Set #5 directs the data processor 110 to generate, for time moment  $j = 1$ , a vector  $N_1$  as a function of at least  $\Delta\gamma_1, \Delta\phi_1$ , and the LU-factorization of matrix  $M_1$  or the matrix inverse of matrix  $M_1$

Instruction Set #6 directs the data processor 110 to generate, for one or more additional time moments  $j \neq 1$ , an LU-factorization of a matrix  $M_j$  or a matrix inverse of matrix  $M_j$ , the matrix  $M_j$  being a function of at least  $\Lambda^{-1}$  and  $H_j^T$

Instruction Set #7 directs the data processor 110 to generate, for one or more additional time moments  $j \neq 1$ , a vector  $N_j$  as a function of at least  $\Delta\gamma_j, \Delta\phi_j$ , and the LU-factorization or matrix  $M_j$  or the matrix inverse of matrix  $M_j$

Instruction Set #8 directs the data processor 110 to report vector  $N_j$  as having estimates of the floating ambiguities, and to repeat Instruction Sets #6 and #7 if vector does not have sufficient (or desired) accuracy, or if it is desired to keep the process going even through sufficient accuracy has been reached.

COMPUTER-READABLE MEDIUM